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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/976,167 | 10/12/2001 | Frederick Paul Benning | ROC920010111US1 | 1982 |

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| EXAMINER | |
|---|---|
| AHMED, SHAMIM | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1765 | |

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/976,167 | BENNING ET AL. | |
| | Examiner | Art Unit | |
| | Shamim Ahmed | 1765 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *07 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-18,35 and 36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,35 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-18,35 and 36 as such that Hartog et al (6,236,542) do not teach the use of a surfactant, which forms a steric hinderance barrier between the substrate and the colloidal particles as defined in claim 1. Accordingly, the arguments have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6, 8-18 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartog et al (6,236,542) in view of Labib et al (6,454,871).

As to claims 1,11-12 and 35, Hartog et al disclose a cleaning polish etch composition comprises a carrying fluid such acid, neutral or base solution and metal etchant such as aluminum nitrate or cerium sulfate or any other etchant depending on the substrate for etching the substrate and/or the attached slurry particles (col.4, lines 19-28, col.5, lines 60-col.6, lines 17).

Hartog et al fail to teach the composition comprises a surfactant that forms a steric hindrance barrier between the substrate and the colloidal particles.

However, Labib et al teach a cleaning composition includes surfactant, wherein the surfactant causes weakening of the bonding and adhesion forces at the interface of the residue (particles) and the substrate surface to be cleaned and increasing the distance between the residue and the surface, commonly known as "steric effect" for easily removing particles or residue effect and which surfactant can be anionic, cationic or nonionic (col.15, lines 3-22).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to combine Labib et al's teaching of introducing a surfactant into Hartog et al's composition for easily removing particles or residue with the help of steric hinderance between the substrate and the particles as taught by Labib et al.

As to claims 2-3, Hartog et al teach that the substrate is a silicate based glass disk (col.4, lines 12-25).

As to claims 4-6, Hartog et al teach that the colloidal particles are silica based and pH of the composition could be about 1.0 (col.7, lines 8-13).

As to claim 8, Hartog et al teach that the pH of the composition could be above 3.0, which reads on claimed pH 3.5 (col.5, line s40-43).

As to claims 9-10, Hartog et al teach that the colloidal particles have a size in the range of 0.001-1 μm (1-1000nm) (col.6, lines 25-29).

As to claim 36, Hartog et al teach that the colloidal particles have a size in the range of 0.001-1 μm (1-1000nm) (col.6, lines 25-29).

5. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartog et al (6,236,542) in view of Labib et al (6,454,871) and further in view of Small et al (6,251,150).

Modified Hartog et al discussed above in the paragraph 4 but fail to explicitly teach that the composition comprises colloidal alumina having a pH of about 3.5-10.5 (claim 8) or a pH of about 7-12 (claim 7).

However, Small et al (6,251,150) disclose a composition comprises colloidal particles of silica or alumina (aluminum oxide) having a pH of about 3.8-9.4 for maintaining the zeta potential of the slurry composition in order clean or remove the residue efficiently (col.10, lines 8-15, col.10, lines 48-51 and col.11, lines 4-7).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to combine Small et al's teaching into modified Hartog et al's composition for efficient removal of particles or residue as taught by Small et al.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shamim Ahmed
Examiner
Art Unit 1765

SA
August 10, 2004